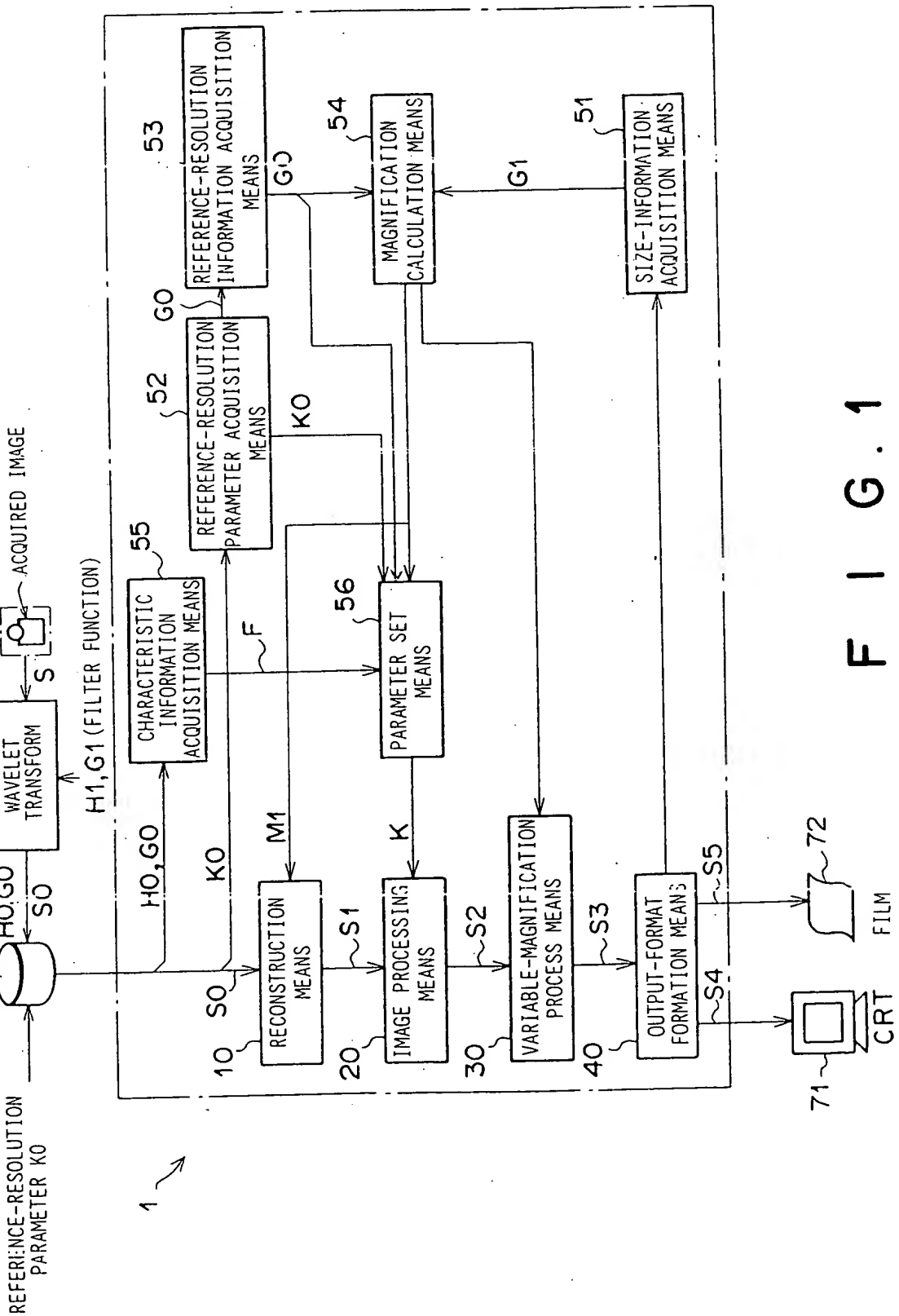

1
FILE SERVER
62
H0,G0
S0
61
WAVELET TRANSFORM
H1,G1 (FILTER FUNCTION)
S
ACQUIRED IMAGE
REFERENCE-RESOLUTION PARAMETER K0
H0,G0
K0
M1
K
S0
CHARACTERISTIC INFORMATION ACQUISITION MEANS
55
F
REFERENCE-RESOLUTION PARAMETER ACQUISITION MEANS
52
K0
G0
REFERENCE-RESOLUTION INFORMATION ACQUISITION MEANS
53
G0
MAGNIFICATION CALCULATION MEANS
54
G1
SIZE-INFORMATION ACQUISITION MEANS
51
PARAMETER SET MEANS
56
RECONSTRUCTION MEANS
10
S1
IMAGE PROCESSING MEANS
20
S2
VARIABLE-MAGNIFICATION PROCESS MEANS
30
S3
OUTPUT-FORMAT FORMATION MEANS
40
S4
S5
72
FILM
CRT
71

FIG. 1

FIG.2

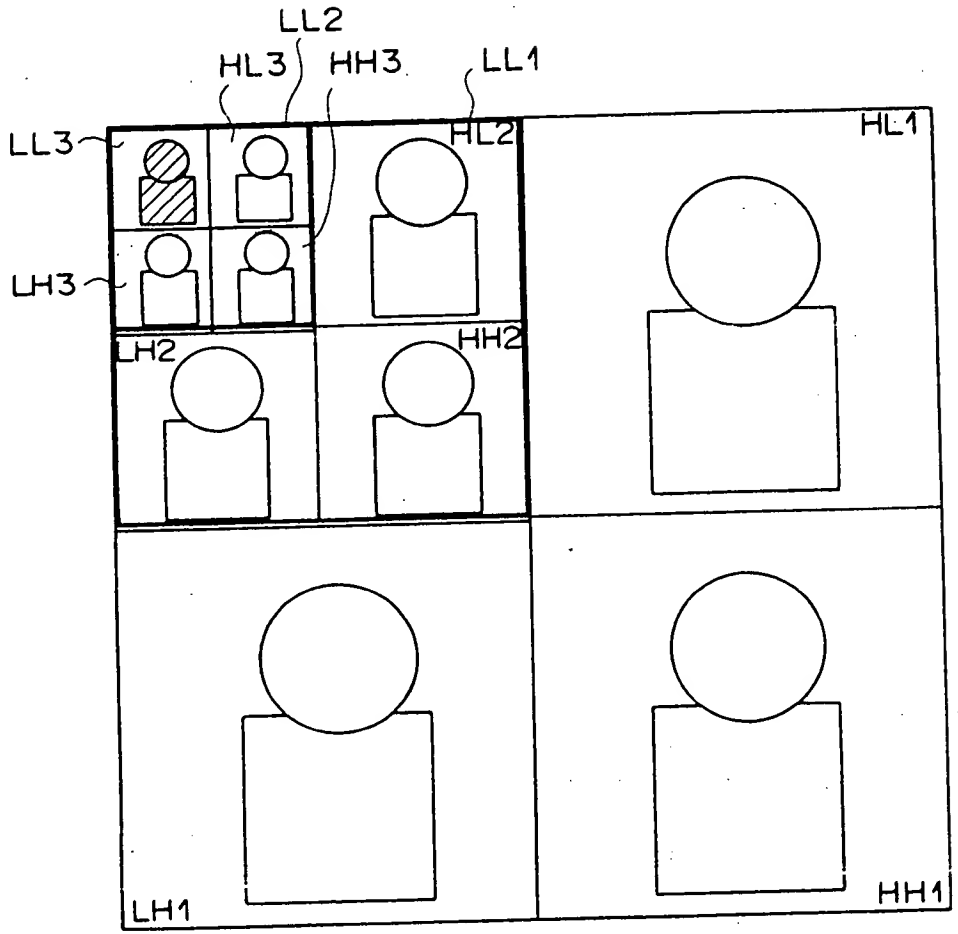
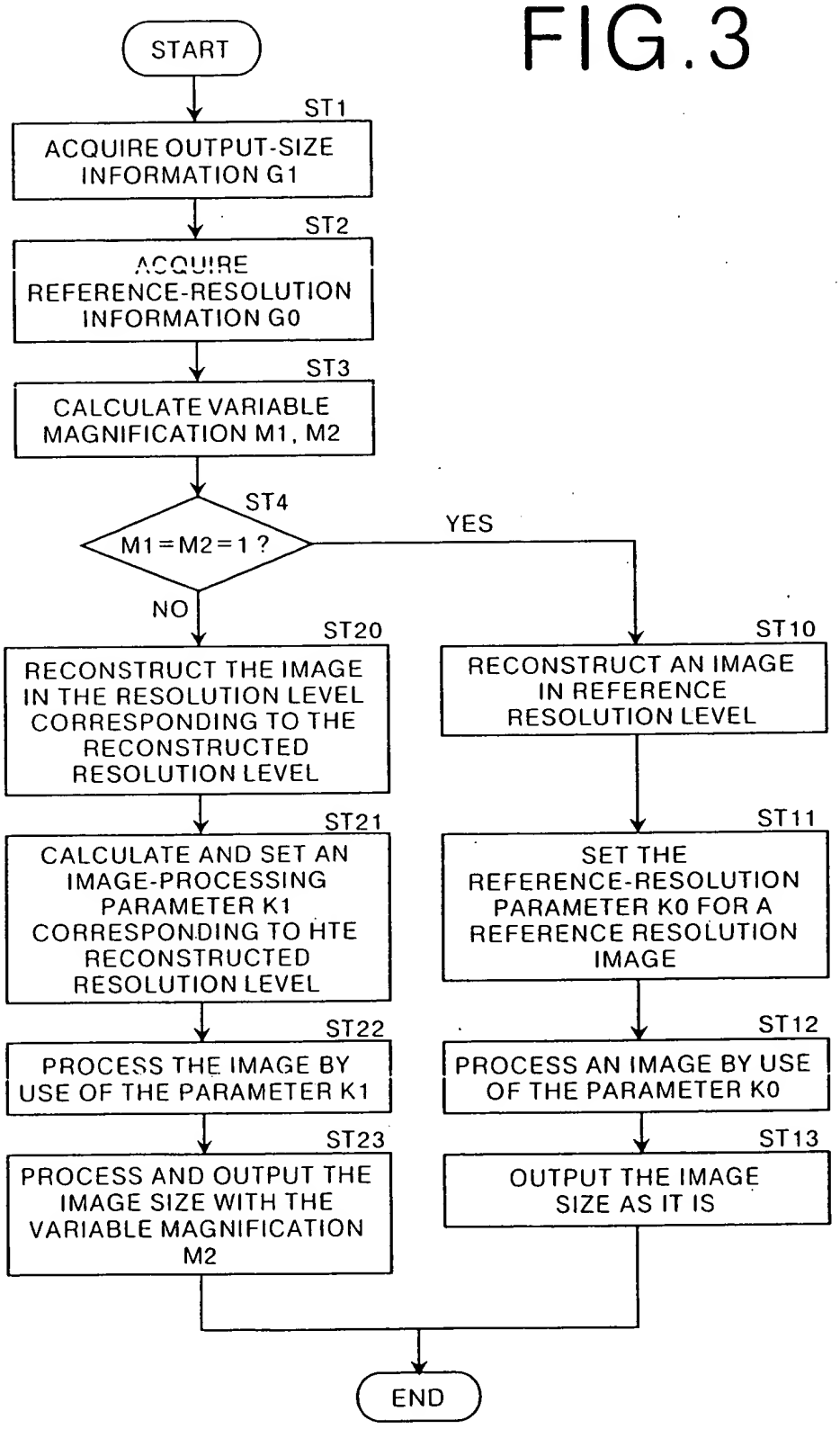


IMAGE SIGNALS SPLIT BY WAVELET FUNCTION

P0202.000 : 02/08/01

FIG.3


START
ST1
ACQUIRE OUTPUT-SIZE INFORMATION G1
ST2
ACQUIRE REFERENCE-RESOLUTION INFORMATION G0
ST3
CALCULATE VARIABLE MAGNIFICATION M1, M2
ST4
M1=M2=1 ?
YES
NO
ST20
RECONSTRUCT THE IMAGE IN THE RESOLUTION LEVEL CORRESPONDING TO THE RECONSTRUCTED RESOLUTION LEVEL
ST21
CALCULATE AND SET AN IMAGE-PROCESSING PARAMETER K1 CORRESPONDING TO HTE RECONSTRUCTED RESOLUTION LEVEL
ST22
PROCESS THE IMAGE BY USE OF THE PARAMETER K1
ST23
PROCESS AND OUTPUT THE IMAGE SIZE WITH THE VARIABLE MAGNIFICATION M2
ST10
RECONSTRUCT AN IMAGE IN REFERENCE RESOLUTION LEVEL
ST11
SET THE REFERENCE-RESOLUTION PARAMETER K0 FOR A REFERENCE RESOLUTION IMAGE
ST12
PROCESS AN IMAGE BY USE OF THE PARAMETER K0
ST13
OUTPUT THE IMAGE SIZE AS IT IS
END

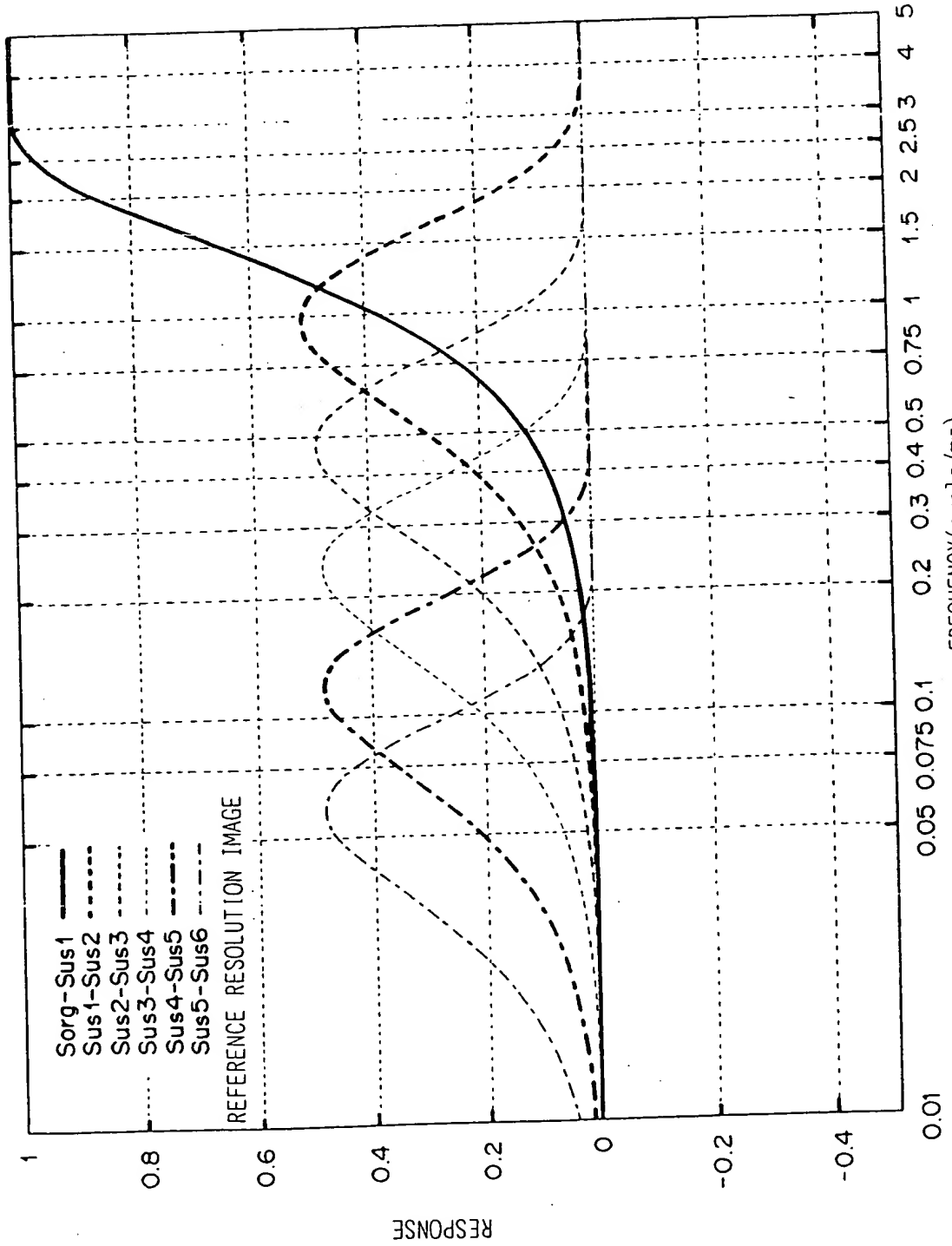


FIG. 4

P86050-US-2001-02-08

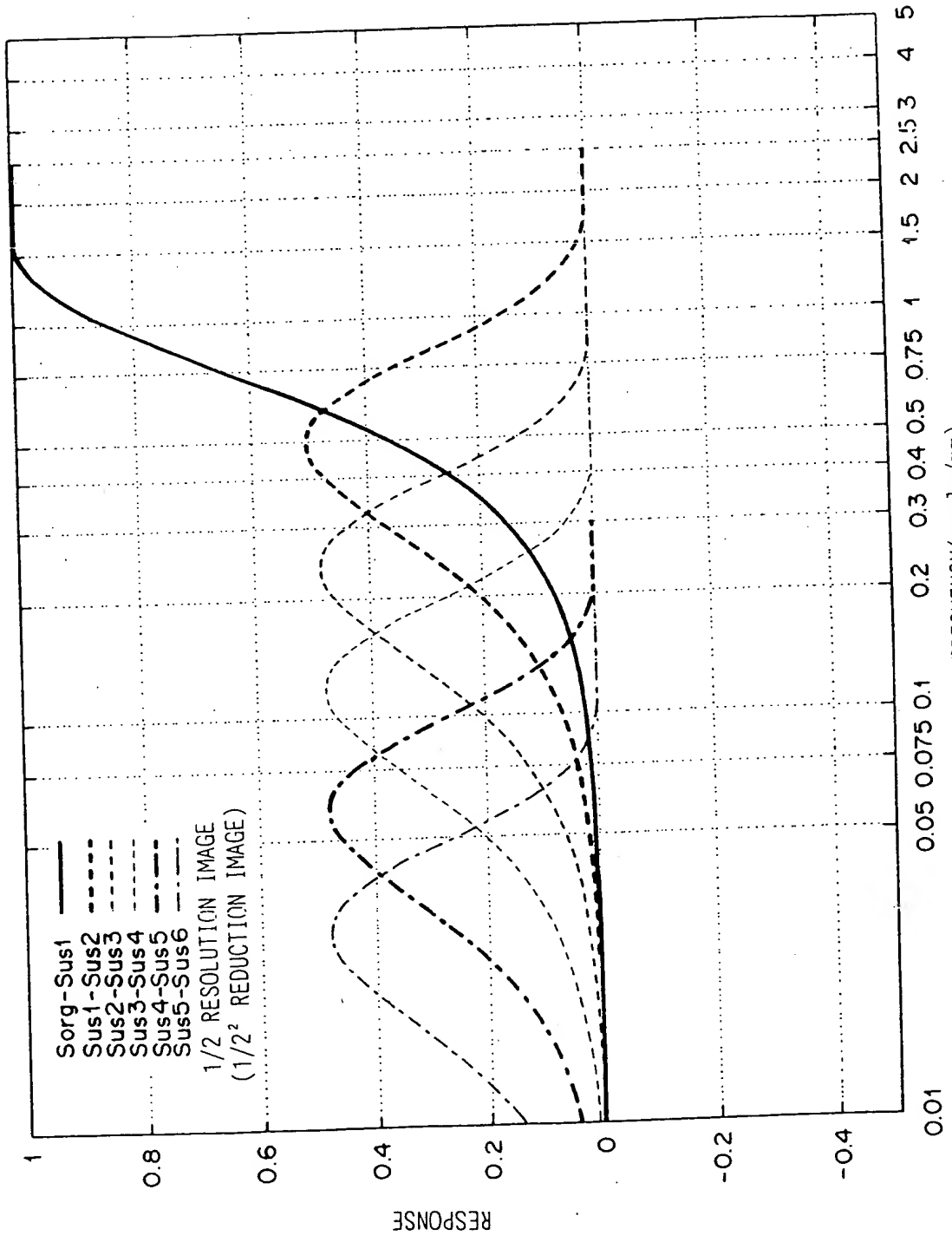

RESPONSE
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
FREQUENCY(cycle/mm)
Sorg-Sus1
Sus1-Sus2
Sus2-Sus3
Sus3-Sus4
Sus4-Sus5
Sus5-Sus6
1/2 RESOLUTION IMAGE
(1/2² REDUCTION IMAGE)

FIG.5

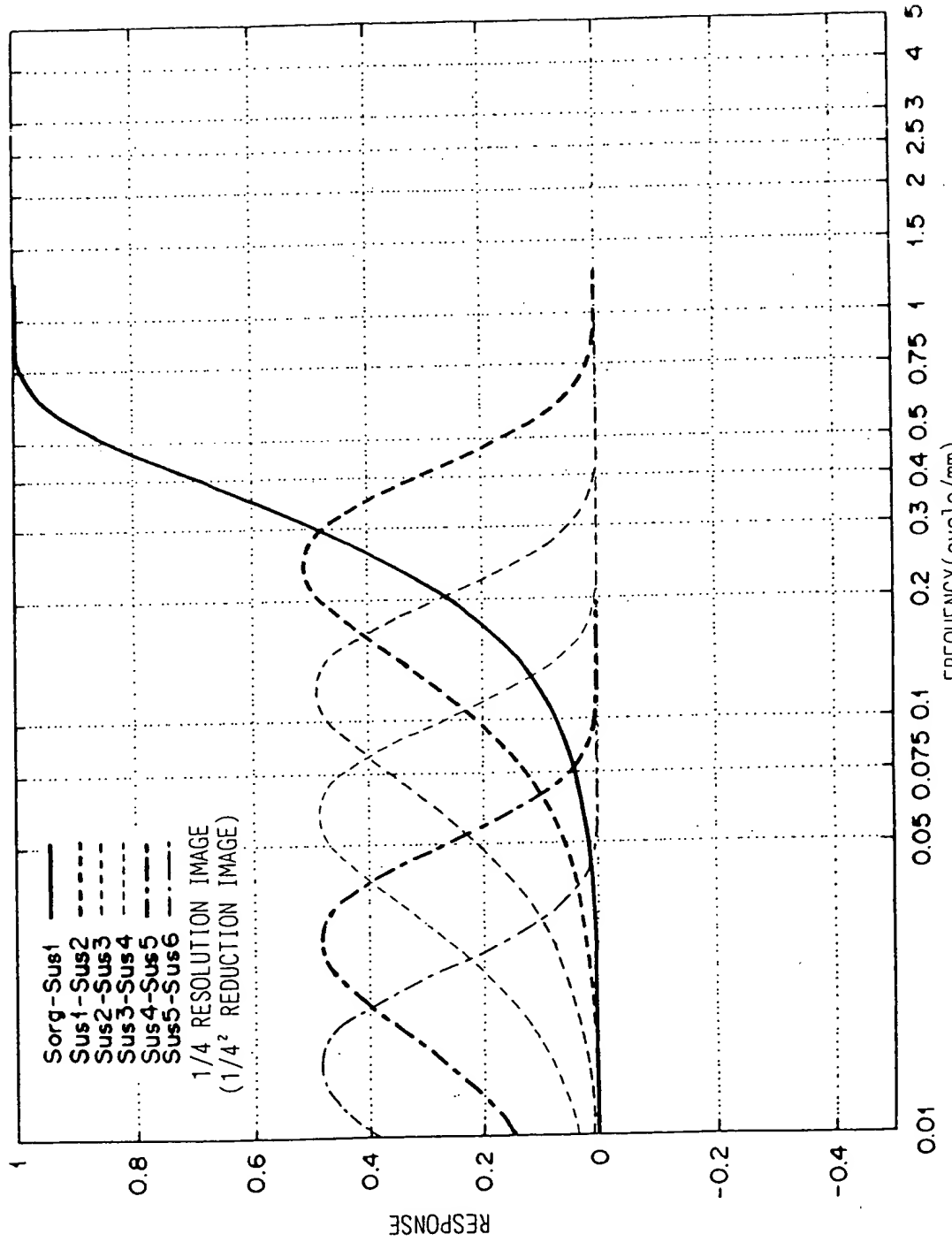

Sorg-Sus1
Sus1-Sus2
Sus2-Sus3
Sus3-Sus4
Sus4-Sus5
Sus5-Sus6
1/4 RESOLUTION IMAGE
(1/4² REDUCTION IMAGE)
RESPONSE
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
0.01
0.05 0.075 0.1 0.2 0.3 0.4 0.5 0.75 1 1.5 2 2.5 3 4 5
FREQUENCY(cycle/mm)

FIG. 6

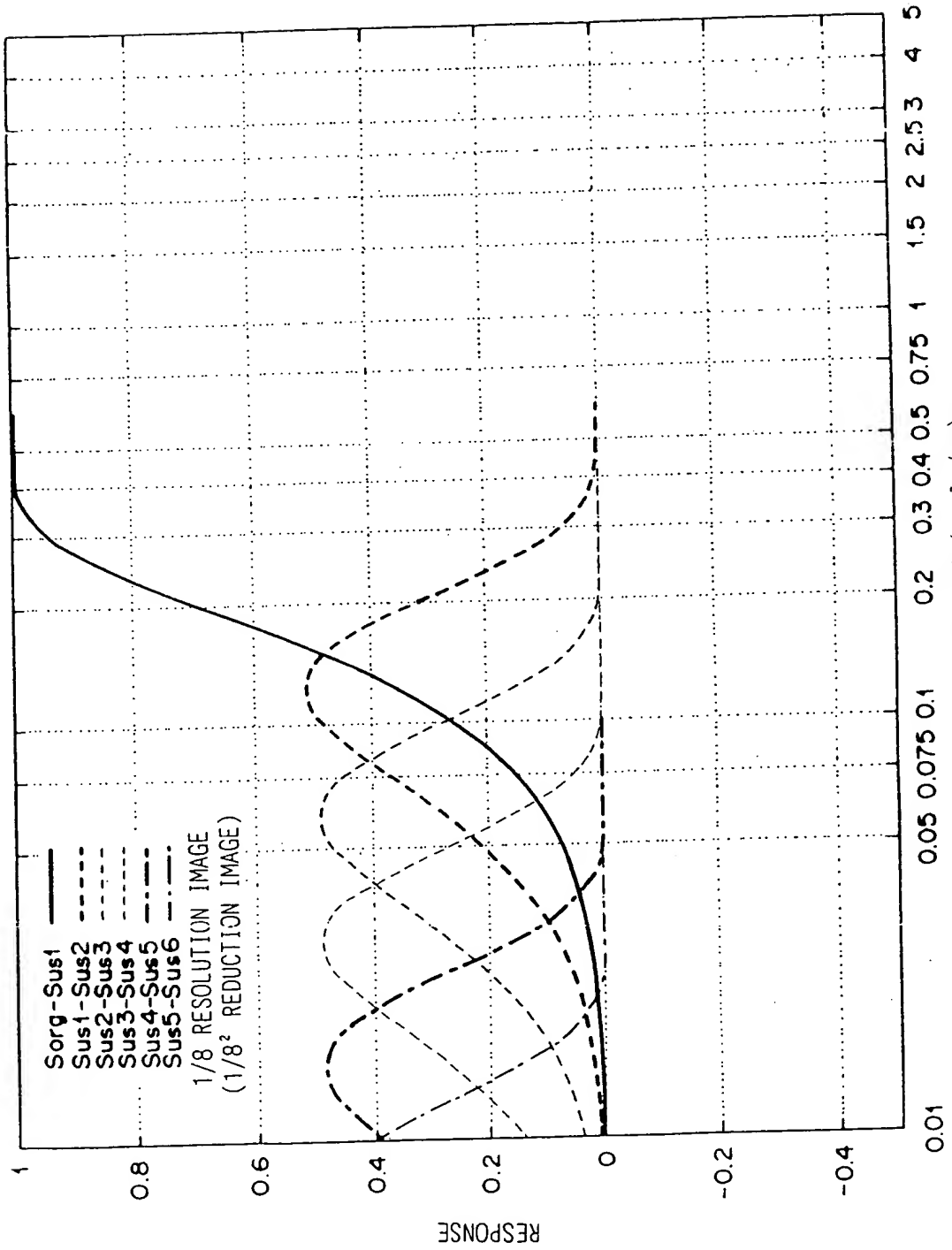

RESPONSE
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
FREQUENCY(cycle/mm)
Sorg-Sus1
Sus1-Sus2
Sus2-Sus3
Sus3-Sus4
Sus4-Sus5
Sus5-Sus6
1/8 RESOLUTION IMAGE
(1/8² REDUCTION IMAGE)

FIG. 7

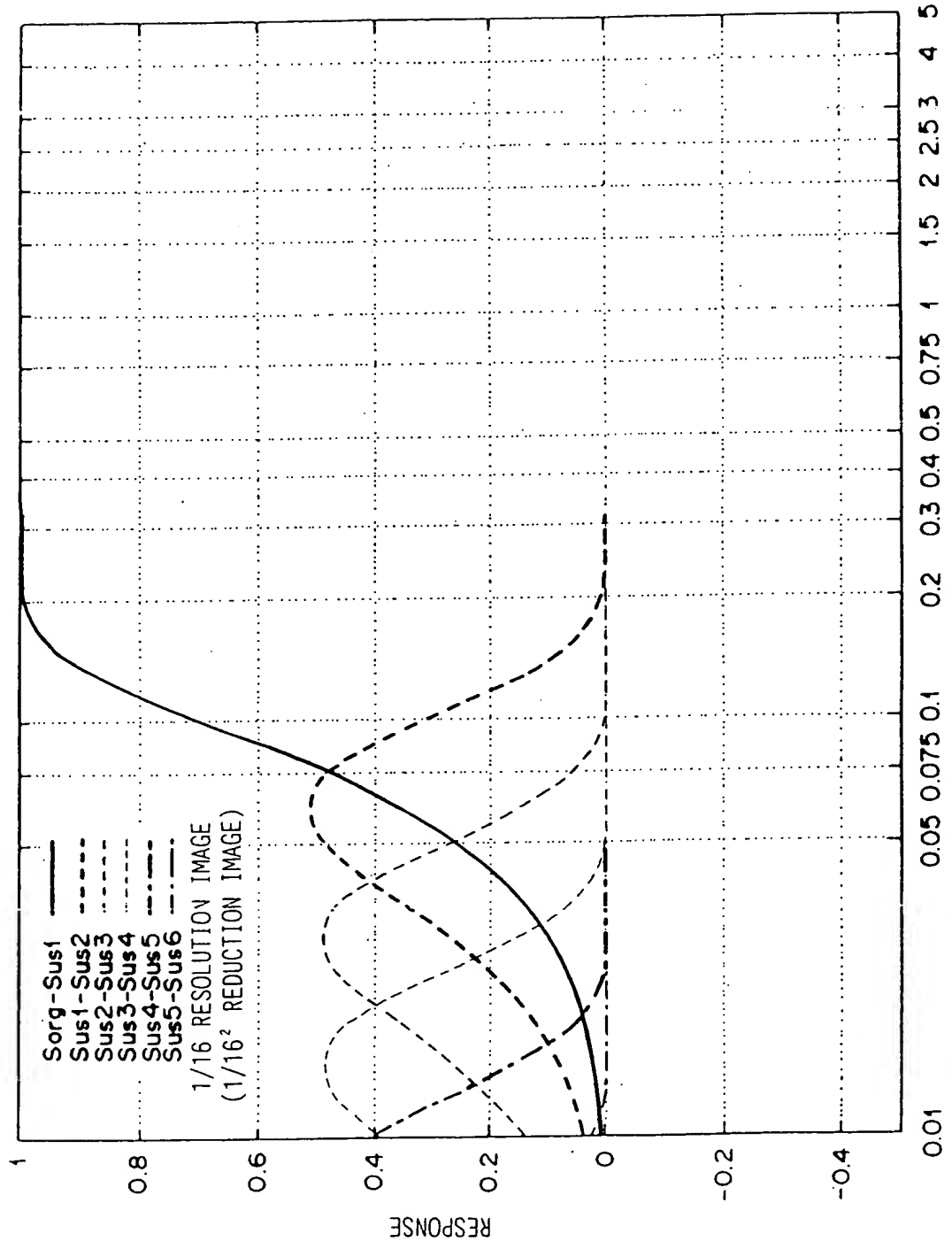

Sorg-Sus1
Sus1-Sus2
Sus2-Sus3
Sus3-Sus4
Sus4-Sus5
Sus5-Sus6
1/16 RESOLUTION IMAGE
(1/16² REDUCTION IMAGE)
RESPONSE
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
FREQUENCY(cycle/mm)

FIG. 8

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FIG.9

REFERENCE RESOLUTION IMAGE	Sorg	Sus 1	Sus 2	Sus 3	Sus 4	Sus 5	Sus 6
1/2 RESOLUTION IMAGE ($1/2^2$ REDUCTION IMAGE)		Sorg	Sus 1	Sus 2	Sus 3	Sus 4	Sus 5
1/4 RESOLUTION IMAGE ($1/4^2$ REDUCTION IMAGE)			Sorg	Sus 1	Sus 2	Sus 3	Sus 4
1/8 RESOLUTION IMAGE ($1/8^2$ REDUCTION IMAGE)				Sorg	Sus 1	Sus 2	Sus 3
1/16 RESOLUTION IMAGE ($1/16^2$ REDUCTION IMAGE)					Sorg	Sus 1	Sus 2

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IMAGE PROCESSING METHOD AND SYSTEM,
AND STORAGE MEDIUM
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FIG.10

REFERENCE RESOLUTION IMAGE	Sorg-Sus1	Sus1-Sus2	Sus2-Sus3	Sus3-Sus4	Sus4-Sus5	Sus5-Sus6
1/2 RESOLUTION IMAGE ($1/2^2$ REDUCTION IMAGE)		Sorg-Sus1	Sus1-Sus2	Sus2-Sus3	Sus3-Sus4	Sus4-Sus5
1/4 RESOLUTION IMAGE ($1/4^2$ REDUCTION IMAGE)			Sorg-Sus1	Sus1-Sus2	Sus2-Sus3	Sus3-Sus4
1/8 RESOLUTION IMAGE ($1/8^2$ REDUCTION IMAGE)				Sorg-Sus1	Sus1-Sus2	Sus2-Sus3
1/16 RESOLUTION IMAGE ($1/16^2$ REDUCTION IMAGE)					Sorg-Sus1	Sus1-Sus2

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FIG.11

REFERENCE RESOLUTION IMAGE	f 1	f 2	f 3	f 4	f 5	f 6
1/2 RESOLUTION IMAGE ($1/2^2$ REDUCTION IMAGE)		f 2	f 3	f 4	f 5	f 6
1/4 RESOLUTION IMAGE ($1/4^2$ REDUCTION IMAGE)			f 3	f 4	f 5	f 6
1/8 RESOLUTION IMAGE ($1/8^2$ REDUCTION IMAGE)				f 4	f 5	f 6
1/16 RESOLUTION IMAGE ($1/16^2$ REDUCTION IMAGE)					f 5	f 6

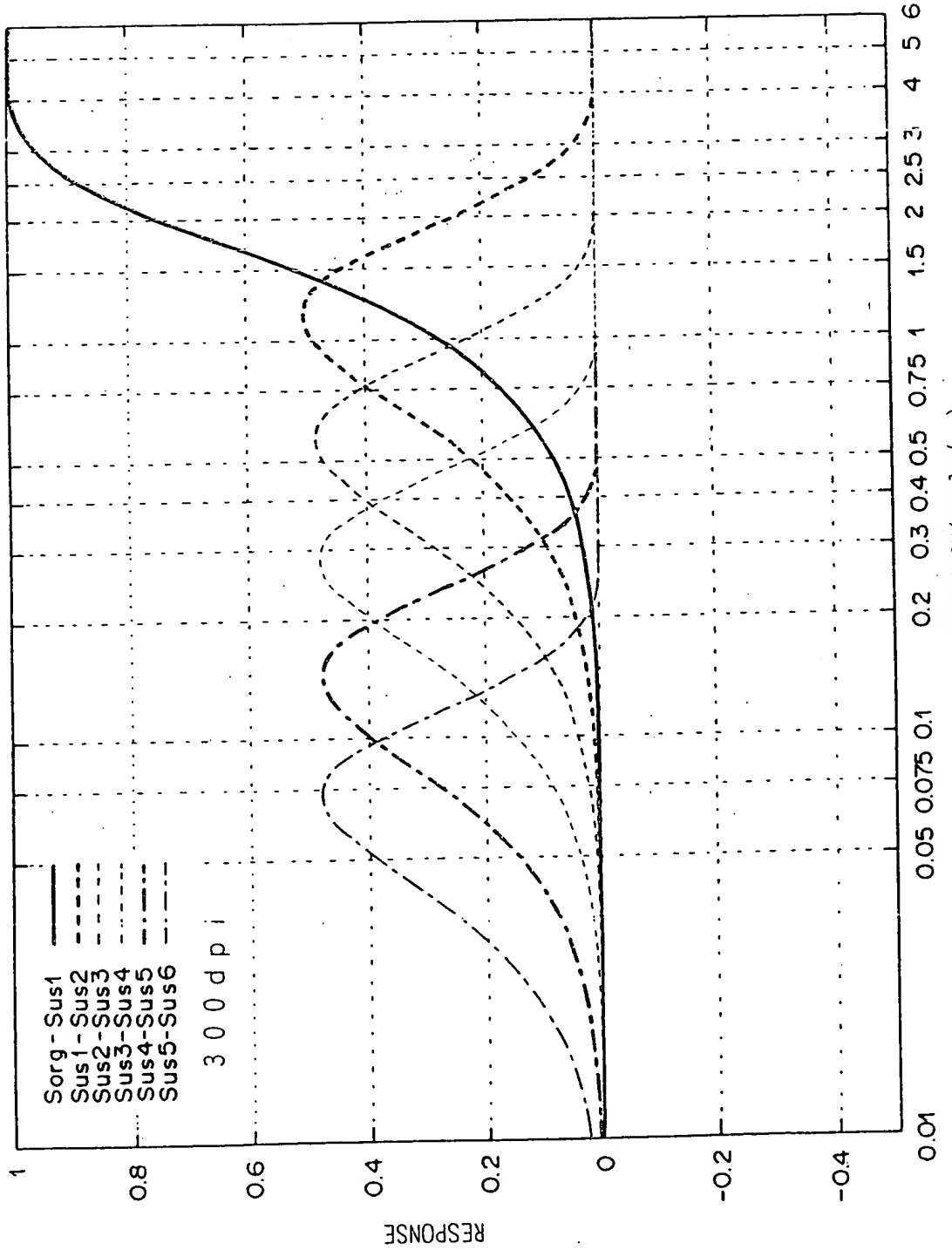
Sorg-Sus1
Sus1-Sus2
Sus2-Sus3
Sus3-Sus4
Sus4-Sus5
Sus5-Sus6
300dpi
RESPONSE
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
6
FREQUENCY(cycle/mm)

FIG.12

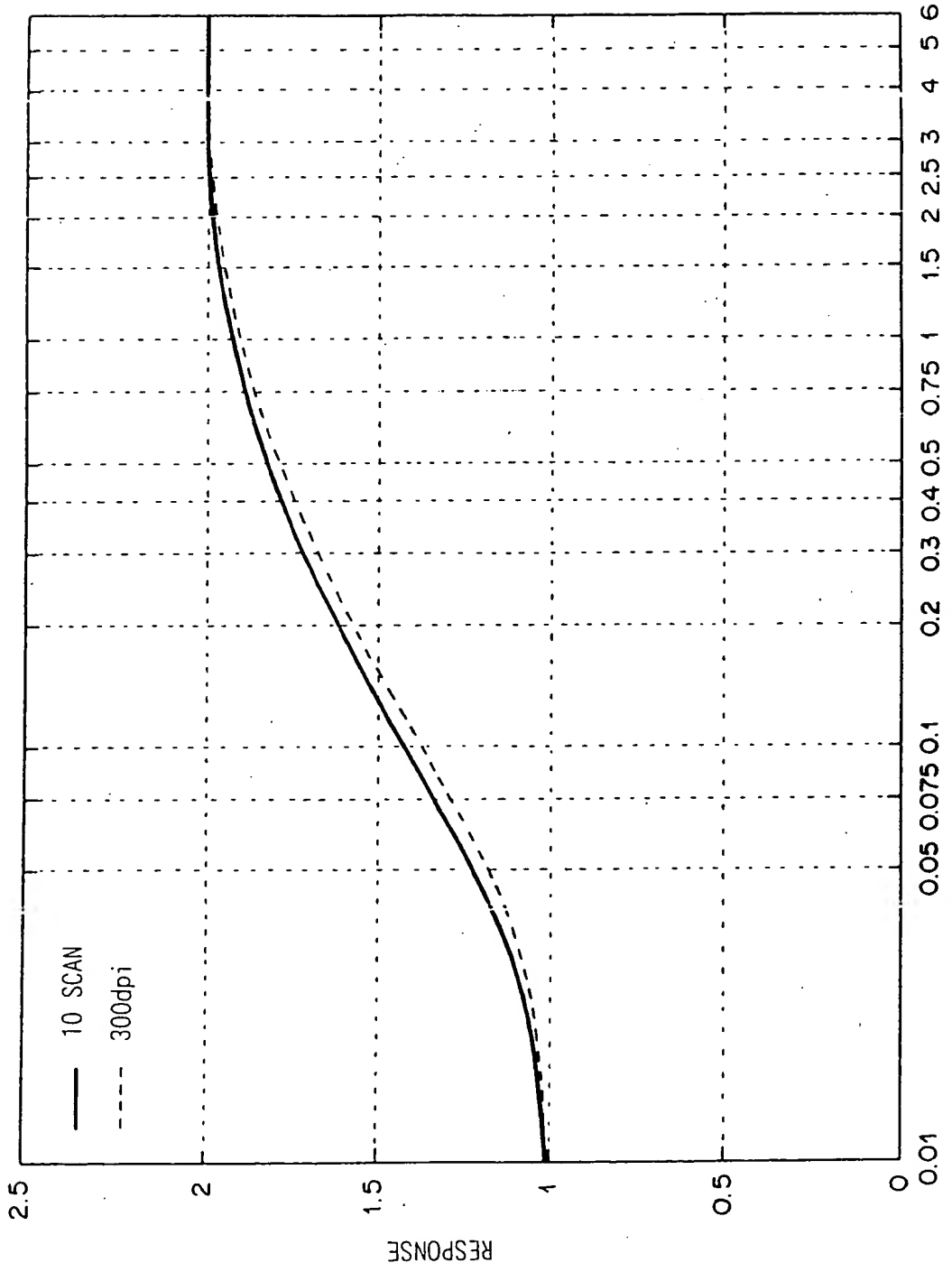
10 SCAN
300dpi
RESPONSE
2.5
2
1.5
1
0.5
0
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
6
FREQUENCY(cycle/mm)

FIG. 13

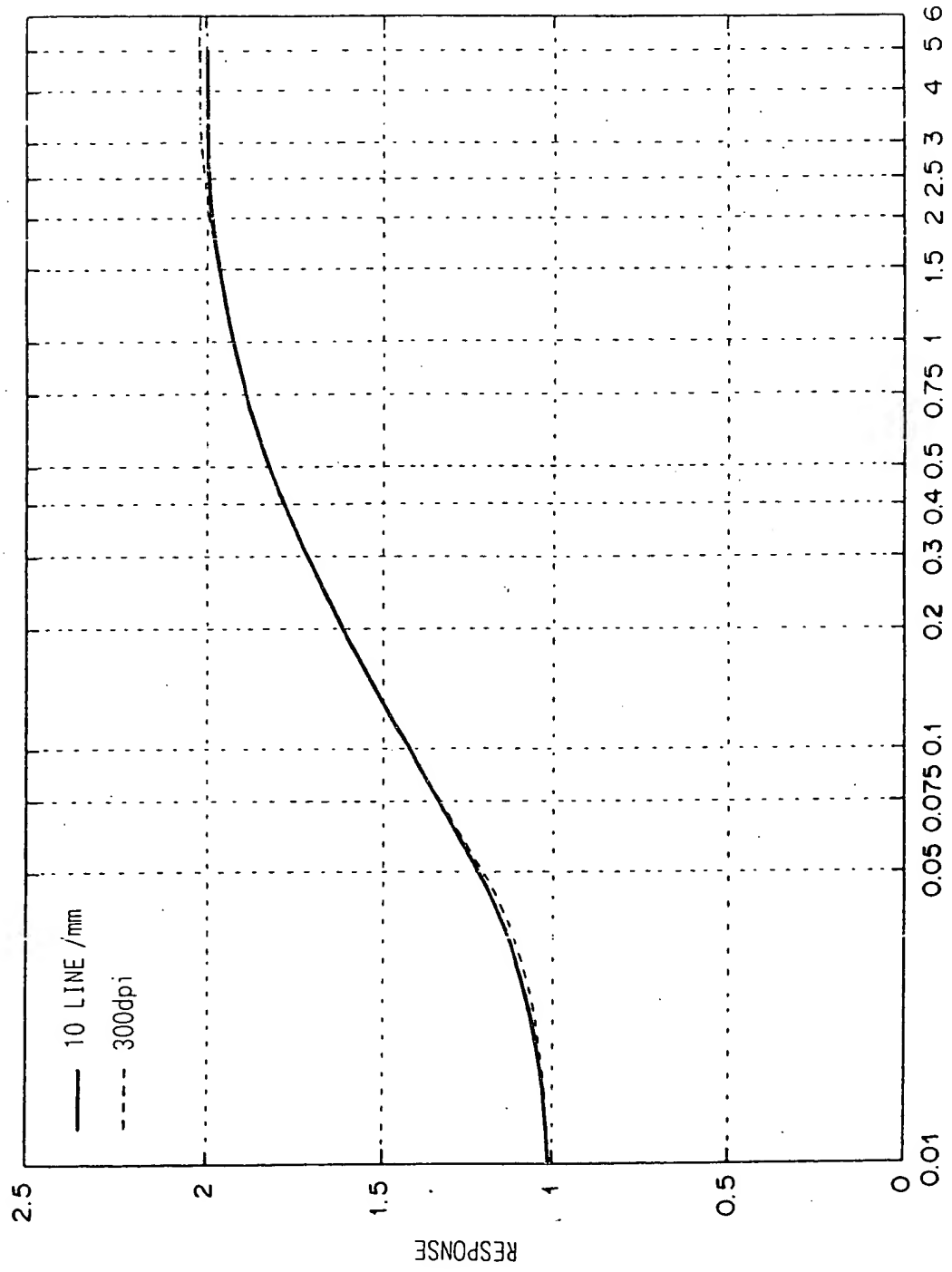
10 LINE /mm
300dpi
RESPONSE
2.5
2
1.5
1
0.5
0
0.01
0.05
0.075
0.1
0.2
0.3
0.4
0.5
0.75
1
1.5
2
2.5
3
4
5
6
FREQUENCY(cycle/mm)

FIG. 14